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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,164	01/05/2000	JORG BOROWSKI	A72204US	8780

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EXAMINER

YEH, EDITH M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/477,164

Applicant(s)

BOROWSKI ET AL.

Examiner

Edith M Yeh

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-13 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9 . 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, in **claim 8**, the data processor for performing a mathematical operation of determining the mathematical argument of a complex sample of the despread digital signal multiplied by the complex conjugate of an immediately preceding sample of the despread digital signal must be shown or the feature(s) canceled from the claim. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Page 6 line 27, “a receiver 14”, the numeral 14 is not shown in the drawing. Appropriate correction is required.

Claim Objections

2. **Claim 5** is objected to because of the following informalities: It suggests adding the legend of k shown in $Z_{\text{offs}}(k)$ and $\varphi_{\text{offs}}(k)$. Appropriate correction is required.

Claim Rejections - 35 USC § 103

Art Unit: 2634

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4, 6-7, & 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima (U.S. Patent 5579338) in view of Bunker et al. (US 6314128 B1).

Regarding **claim 1, 6, & 13**, Kojima discloses a receiver of a spread spectrum communication system with a plurality of receivers (column 1 lines 14-20) and its method. The receiver comprises: an analog to digital converter (22/24 Fig.5/9); a digital signal despreaders (34/36/38 Fig.5/9) using the PN code of M chips (column 2 lines 9-18) to despread the code-spread signal having a first data rate and obtaining the symbol duration despread signal having a second data rate which is lower than the first data rate (column 2 lines 52-60, correlation signals with symbol duration); and a frequency corrector (40-76, 14 Fig.5/9, column 7 lines 49-63) comprising a feedback loop (72-76 Fig.5/9) including a frequency offset detector (60-70 Fig.5/9) and a combiner (10/12 Fig.5/9) for combining the frequency correction with the code-spread signal. Kojima has all subject matter claimed except to explicitly show the RF signal receiver for generating an analog signal from a received RF signal. However Bunker et al. teach the RF signal receiver (22,28 FIG.1). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have the RF signal receiver taught by Bunker et al. to completely show every components of the spread spectrum receiver from the signal received from the antenna.

Regarding **claims 2 & 7**, Kojima discloses a filter for filtering the frequency offset to reduce noise (300-310 Fig.2, 70-74 Fig.5/9, column 3 lines 33-39, column 7 lines 57-58) wherein the integrator as the filter averages the frequency offset, the error signal.

Regarding **claim 10**, Kojima discloses an interpolator (60-68, 80 Fig.9) for calculating phase offset values from an average phase difference calculated from samples of the despread signal (column 9 line 50-column 10 line 15).

Regarding **claims 4 & 11**, Kojima discloses the communication system is a CDMA system (column 1 lines 14-20).

Regarding **claim 9**, Kojima discloses a multiplier (10/12 Fig.5/9) for multiplying the code-spread signal by a correction factor (62/66 Fig.5/9) prior to despreading the code-spread signal.

Regarding **claim 12**, in addition to the features of claim 6, Bunker et al. further teaches the communication system is a wireless local loop link. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to deploy the Kojima's communication system in the wireless local loop link, not limited to military applications to reduce the interference (column 1 lines 13-25 '128).

5. **Claims 3 & 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima (U.S. Patent 5579338) in view of Bunker et al. (US 6314128 B1), further in view of Jagnow et al. (US 4468784).

Kojima does not specify the data processor for performing the mathematical operation (column 9 line 50-column 10 line 15), however Jagnow et al. teaches the data processor for providing the error signals to the loop filter (FIG.2, 20 FIG.3, column 2 lines 35-52). At the time

Art Unit: 2634

of the invention, it would have been obvious to a person of ordinary skill in the art to use the data processor taught by Jagnow et al. to perform the mathematical operations required by generating the frequency offset to have a simple configuration of a digital circuit of a code-correlator of a SS communications system receiver (Abstract '784, column 3 lines 54-60 '338).

Allowable Subject Matter

6. **Claim 5** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Yeh whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4800.

Application/Control Number: 09/477,164

Page 6

Art Unit: 2634

Edith Yeh
April 14, 2003



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
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